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HE TUBERCULIN REATMENT OF CONSUMPTION

. . . "*Men*
Perished in winter-winds till one smote fire
From flint-stones coldly hiding what they held."

ARNOLD

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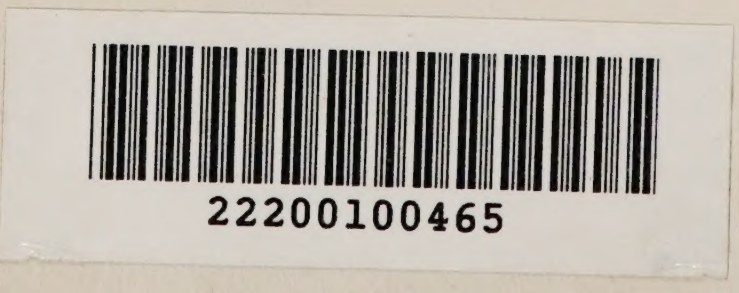
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THE TUBERCULIN TREATMENT OF CONSUMPTION

BY

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PREFACE

THE purpose of this booklet is to bring before the people of England the claims of the Tuberculin Treatment for Consumption, originally introduced by the late Professor Koch, discarded for a time, and now once more resuming its rightful place in our English armoury.

NEW BARNET,
May 1912.

THE TUBERCULIN TREATMENT OF CONSUMPTION

A Retrospect

Every one over forty years of age will remember how in the early nineties a message of hope was wafted to England from across the seas, a message pregnant with interest for all mankind, but especially for town dwellers in cold, damp climates, where the white scourge claimed its victims both from young and old.

It was a message of hope and gladness, for it told of the breaking of a great light where darkness had reigned till then; it foreshadowed health and life instead of disease and death. And

it hailed from a country which England had learnt to respect, a country where hard thinking and patient work had already borne fruit to the world. Years of strenuous toil and research in the German laboratories had yielded their harvest to the genius of Koch, and he had announced to the profession his great discovery. The cause of consumption was known at last, and a remedy, almost unfailing, had been found.

The news spread everywhere. Medical press and lay press alike caught up the message and proclaimed it broadcast for all it might be worth. It was received with gratitude, it was welcomed with joy.

But it is the eventide that tells what the day has been, and the roll of the years must be called before the truth or error of the new views could be placed beyond doubt.

What is the verdict of the years?

"Failure."

But is the last word spoken here? It is not.

"Failure through ignorance" is the truer message of the years, and it is our purpose to-day to inquire into the causes leading to this result, and to show how the knowledge gained can be turned to fruitful account.

Let us first examine the nature of Koch's message. It embodied two clear statements. (1) That tuberculin was a sure diagnostic test for consumption; and (2) that early cases of consumption treated with tuberculin could be cured with certainty. If these could be substantiated as facts it would mean a tremendous step onwards, for it would establish an unfailing test in the many doubtful cases that arise in practice, and would provide a method of treatment, comparatively inexpensive, and absolutely reliable.

But it so happened that the message from Germany came at a time when an epidemic of influenza was devastating Europe, and many cases of latent tuberculosis, attacked with influenza, became active, and produced a mixed type of illness very difficult to treat. For the profession was called upon to deal, not with a simple case of influenza, or a simple case of tuberculosis, but with cases in which the germs responsible for these two separate diseases were operating together in one and the same patient, with the final result that the symptoms due to the tuberculosis masked and often overshadowed those due to the influenza. It thus fell out that when medical men came to apply tuberculin to cases like these, they found themselves handling a weapon not only foreign to their grasp, but entirely unsuited to the disease it was designed to combat. For the germ responsible

for influenza is wholly dissimilar to the tubercle bacillus which causes consumption—it will not yield to tuberculin, and if tuberculin is used in cases like these, most serious results may follow. We know now that cases of mixed infection and high fever ought never to be treated with tuberculin, and had this fact of clinical experience been known to the profession in those early days we should never have abandoned it as a remedy for consumption. But the world has to buy its experience even though the toll be paid in human life —through ignorance of conditions we threw overboard a remedy of unique value, and the price we pay to-day for our folly is an English death-roll of 55,000 in every year from this one disease alone.

If this death-roll of 150 souls each day included mainly the aged or unfit, the loss to the nation might not

be felt, but these are not the chief sufferers; it is the growing child and young healthy adult who are chiefly attacked, for it is found that almost one-third of all the deaths that occur from any cause whatever between twenty and thirty-five is due to tuberculosis.

And there is yet another consideration, tersely expressed by Wilkinson in his classic on consumption, "Mortality is not morbidity." A large proportion of the sufferers from tuberculosis do not die, but make a good recovery after an illness long or short. So that where death from tuberculous disease claims one victim, we may say that illness lays its hand on many, robbing men and women of their power to do life's work, and making them, often for long periods of time, a burden on the community where they dwell. For consumption does not kill quickly—it kills very

slowly, and during the long-drawn-out years these sufferers are a danger to every one around them. Brother infects sister, parents infect their children, friend infects friend.

The influence, too, on the development of child-life must be borne in mind. Pallor and shortness of breath may be the sole outward indications of ill-health, but deeply imbedded in gland, or bone, or lung tissue the deadly tubercle bacillus is waging war with a constitution that is only just able to hold its own, and though it may not destroy, it will hinder growth, and may lay the foundation of serious trouble in later years.

And all this illness is preventable, as preventable as typhoid and smallpox; the hygienist is dealing with it and will eventually conquer it, but our existing social conditions will for many years to come ensure the presence of consumption in our midst, and for the

established disease tuberculin is the one reliable remedy.

Having regard to the comparatively recent introduction of the tuberculin treatment, and the very divergent views held by the profession as to its value in tuberculosis, it may be well to look for a moment into the essential nature of that disease in the light of present-day knowledge.

Art comes to the Aid of Nature

In the first place, it must be remembered that consumption is not hereditary; the disease itself is seldom or never transmitted from parent to child, it is the tendency—the soil suitable to the growth of the bacillus—which alone is transmissible. The actual cause is the entrance into the lung of air exhaled from a consumptive and laden with tubercle bacilli. These tiny germs,

wholly invisible to the naked eye, find a lodgment in the smaller bronchial tubes, multiply by fission, set up local irritation, and secrete a toxic product called tuberculin. It is the poisonous nature of this product which does the real mischief. Intensely irritating, it destroys the vitality of the tissues encasing it, and brings about ulceration and consolidation. But this advanced stage is not always reached. Nature has provided an antidote, which in strong, healthy people will commonly effect a cure.

Directly tuberculin is brought into contact with living tissue it sets up a reaction, which results in the formation of "antibodies"; these unite with the tuberculin and render it inert; the destructive process is brought to an end, and the patient recovers. This explains the fact that so many thousands of people are exposed to the infection and

yet escape consumption. But very many do not escape at once, if at all; the antibodies formed are not equal to the work demanded of them, weeks and months of illness may ensue before recovery sets in, and permanent injury to lung or joint (for the germ will travel anywhere) is often left behind. It is here that the tuberculin treatment steps in, and brings to Nature just the aid she needs. Now, what is Nature's need, her urgent need at this moment? Let us consider her position.

Nature is confronted with the impending destruction of lung tissue by an irritating toxin called tuberculin, and her only method of meeting the danger is to create antibodies to destroy the tuberculin. She has done this to the best of her power, but the antibodies formed have failed to play their part, being too few and too weak. The toxin she seeks to destroy is getting the upper

hand, and if left alone, will in due course claim its victim. But if at this juncture Art comes to the aid of Nature, follows her lead, and initiates a process whereby strong, active antibodies are formed in sufficient numbers to neutralise the deadly tuberculin, this reinforcement of Nature's defences will just turn the tide of battle, and bring in victory where defeat seemed imminent.

The thoughtful reader will say, "But if Nature's tuberculin fail to create efficient antibodies, what guarantee is there that the tuberculin of Art will be more effective? Wherein does the difference lie?" It lies just here, that Nature works in a measure blindly—works with power and persistence, it is true, but still blindly. Art works under Reason's guide, after first kneeling at Nature's feet—and working thus, Art succeeds where Nature fails.

Nature secretes her tuberculin, virulent

and destructive, just where the tubercle happens to be—in the spongy tissue of a lung, or the soft synovial membrane of a joint, and the antibodies formed to neutralise it are evolved out of this diseased area, where the increased irritation cannot well be borne. The tuberculin of Art is grown in the laboratory, sterilised by heat, and then filtered through porcelain. It is injected into the healthy muscular tissue of the arm, and the antibodies formed to neutralise it are evolved from this same healthy tissue.

Tuberculin secreted in the lung will generate antibodies that may win or may lose the battle on which the life of the patient depends. Tuberculin injected into the arm will start a process in which victory is never in doubt. For the uncontrolled methods of Nature no longer hold the field; judgment takes the place of chance, and a dose is selected

which shall exactly meet the condition of the patient at the time. The amount of tuberculin injected will always be such that the antibodies formed to neutralise it shall be equal to their work, and leave each time an unused surplus which is carried by the blood-stream to the assistance of the Nature-formed antibodies in the lung. And when it is understood that this unused and available surplus is definitely increased week by week as the patient can bear it, until the whole system is immune to any possible attack of tubercle bacilli, the real value of the succour brought by Art to the aid of Nature will be more accurately gauged.

Such, in broad outline, are the essential principles on which the tuberculin treatment is based. Let us now look at the subject from the practical side, and record what experience has to tell of the actual results achieved.

Treatment

In any new subject that comes before us, first-hand knowledge is everything. To gain this, we will go to the Tuberculin Dispensary in Kennington established by Dr. W. Camac Wilkinson the year before last, and see what the patients are like and what they have to say.

We find perhaps a dozen of them waiting their turn in a bright cheery ante-room, overlooking the Kennington Road. Some are looking sad enough —the new cases—people who have simply heard of the treatment, and do not know if they will be taken on or not. The rest—well, some are pale, but the greater number are looking remarkably fit, and if you ask them, they will tell you they feel as they look. One lady visitor, who came last year, remarked that they looked like a party just returned from the seaside.

Work begins at 9 o'clock, and it takes all the morning to see and treat the thirty or forty patients who attend. For none are admitted without a careful and thorough examination, the family history, personal history, and present condition all being brought under review. Cases hopelessly beyond reach have to be sent away, but among those accepted for treatment are many in the second, or second-to-third stage, with well-marked pulmonary cavities and areas of consolidation. Experience has shown that these patients often do very well eventually, but the course is naturally a longer one than that needed for contact cases, *i.e.* early cases of quite recent infection.

Treatment is not generally given on the first day, because the dose of tuberculin needed by each individual case is largely regulated by the temperature curve, and the patient is accordingly

taught how to take and record his temperature three times a day. But three days later they attend again, bringing their charts, and the first injection of tuberculin is given. This causes some local reaction in the arm like vaccination, but it varies greatly according to the susceptibility of the patient, and it dies down in two or three days' time. There are also some constitutional symptoms; and all these results, taken together, form a clear guide to the doctor in charge as to the particular kind of tuberculin required, and the dose best suited to the case before him.

Regular attendance twice a week is now required, and for the first week or two very little change is noticed. Then, very gradually, about the third or fourth week, there begins to creep in a feeling of returning health; the cough may or may not improve at this stage, but it is a trifle less harassing than it was, the

day's work is less wearing, there is the conscious possession of a new strength. No lasting impression has been made as yet on the central lesion, but the tuberculin is doing its work, the system is getting unpoisoned. The patient comes into the room with a more active step, his skin looks clearer, his eye brighter, and by-and-by he will tell you that the paroxysms of coughing are less frequent, that the expectoration has diminished, that the night sweats are now rarely experienced. At first he may, and very often does, lose in weight; then he begins to put on flesh, though not to the same extent that he would do in a sanatorium, because he is not an idle man, just resting and feeding, but a man living exactly the same life that he was living before he started treatment. Indeed, one of the most significant features of this treatment is that it can be carried out on patients

whose environment remains unaltered—the mother is not taken from her nursing child, the breadwinner is not taken from his daily work.

So the months roll on, until after six months' treatment, sometimes longer, the day comes when the patient receives his final dose of tuberculin, and he returns home with the knowledge that his enemy has been laid in the dust.

Results of Treatment.

Of the after-history of these cases it is as yet too early for an English writer to speak, but the following extracts from Dr. Wilkinson's work will show his experience in Australia. Writing in 1908 he says: "I have here presented 115 cases in the first stage of pulmonary tuberculosis, including in stage 1 all cases of stage 1–2." Three of these patients only had two months' treatment, two refused treatment, and are since

dead, but "of the 110 cases treated fully from 1902–1908, I know of the deaths of three cases, one of acute malaria, one of splenic anæmia, and one after an operation for obstruction. I have done my best to keep in touch with all my cases, and I have not yet heard of a single case dying of pulmonary consumption."

As regards cases in the second stage of consumption, where there is more or less extensive consolidation of the lung, the results are of course far less encouraging, but even here Dr. Wilkinson records successful treatment in fully 60 to 70 per cent. of the cases. It is also worthy of note that these results were obtained, not on some elevated plateau where dry air and sunshine play an important part, but in the populous city of Sydney, the climate of which has for years been condemned by the medical profession.

But coming back to the problem as we find it in our own country, the results

obtained last winter in London, and personally witnessed by the writer and other medical men during an unbroken period of six months' observation, were beyond all doubt sufficiently encouraging to warrant a fair public trial being made of this mode of treatment. Already, we may add, a good deal has been accomplished. The Kennington Dispensary (263, Kennington Road) has been thrown open to all medical men and medical women, also to all responsible people who will take the trouble to come and see for themselves what is being done. Nor has the invitation been issued in vain: some eight or ten medical men and women are always present when work is going on; and outside people—clergymen, county councillors, and others—come from distant parts to ascertain by personal contact with the patients the truth or the error of the report that has come to their ears. Last spring the

municipal council of Inverness—a town of 20,000 inhabitants, where consumption is rife—took the trouble to send down one of their own medical officers, Dr. Victor Mitchell, to investigate the facts first hand and report. He came to London, spent a month or six weeks at the dispensary, thoroughly acquainted himself with the principles and technique of the treatment, reported favourably to his Council, and started work on similar lines on his return to Scotland.

Writing from Inverness in December, 1911, Dr. Mitchell says:

"I have been administering tuberculin in this dispensary since July last, but have not finished the complete course in any case, as it takes at least eight months to do so. *So far*, I agree with you that tuberculin administered on this system in early and proper cases does all that Dr. Wilkinson claims for it. . . . Since

the Corporation started this dispensary many private practitioners have begun to use tuberculin on this system, and they all speak well of it."

The Extension of Tuberculin Treatment.

In London, four tuberculin dispensaries have now been established—at Kennington, Bermondsey, Battersea, and Greenwich; while provincial branches have been opened in Aldershot, Street (Somerset), Portsmouth, Margate, Aberdeen, Inverness, Leith, Irvine (Ayrshire), and Naas (Ireland). The experience gained in Edinburgh is instructive. Writing from the Public Health Office, Charlotte Street, Leith, in June 1911, Dr. William Robertson, Medical Officer of Health, says:

"I can scarcely give you a report, since our scheme has only been in operation

for nine months. We have not as yet an official dispensary. . . . This may be said, however, that tuberculin administered in progressive doses has in Leith given results that we were never able to achieve by mere open-air methods. These had been in operation for nine years. After carefully weighing the pros and cons I can arrive at no other conclusion than that demonstrated, which means that tuberculin offers far more help to the consumptive than sanatorium treatment alone. It is treatment on a scientific basis by a specific. We tried for a long time the fractional dosage system with tuberculin, but found it most unsatisfactory as compared with the administration of increasing doses."

Dr. Robertson's latest report is dated 4th January 1912:

"Having given tuberculin an extended trial, we now have instituted a dispen-

sary, which differs somewhat in principle from that in operation in other districts. Suitable cases (twenty in all) are treated in open-air shelters in the grounds at the Isolation Hospital for a month, and are given tuberculin in increasing doses. At the end of that period the patients are sent home, but go to the dispensary to have the specific treatment continued. At the dispensary new-comers are examined, and if found suitable drafted on to the hospital. Often cases are visited at their houses and test doses applied to contacts. The month's residence at the hospital, together with good food and fresh air, afford tuberculin an excellent opportunity to prove its value. If medical men would only take pains to give this question some study they would soon realise its vast importance. German physicians declare that the omission to give tuberculin is tantamount to neglect on the part of the doctor. A brief experience

with tuberculin will incline one to subscribe to that teaching."

An association called "The Tuberculin Dispensary League" has been established for the purpose of making the tuberculin treatment more widely known, and of raising funds with the object of creating "a vast network of tuberculin dispensaries all over the United Kingdom to help stamp out the great 'white peril' that is devastating the land." The president is the Countess of Mayo, the chairman Dr. Camac Wilkinson, and there are some ninety members drawn from all classes of the community. The honorary secretary is Mrs. Steuart Erskine, 10, Ovington Gardens, S.W.

For the guidance of practitioners who may desire to test the value of the tuberculin treatment, it may be added that the most useful preparations are: for diagnosis, Koch's "old tuberculin"; and, for

treatment in the initial stages, the bovine preparation known as P.T.O. (Perlsucht tuberculin original). The commencing dose is half a milligramme, and this is gradually increased until a dose of one gramme can be tolerated. But there are certain conditions attached to the successful use of tuberculin, and men who want to give the treatment a fair trial in their own practice are advised to pay a visit to one of the centres already established in London or the provinces. They will there see results that will inspire confidence, and they will gain a practical knowledge of the technique essential to success.

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